

Claims

1. Beverage dispensing apparatus, the apparatus being formed so as in use to provide a vortexial motion in the mass of beverage flowing through the apparatus.

2. A beverage dispensing apparatus as claimed in claim 1, having a flow chamber having a substantially circular cross section, an inlet and an outlet.

3. A beverage dispensing apparatus as claimed in claim 2, wherein the inlet extends substantially at a tangent to the circular cross section of the flow chamber.

4. A beverage dispensing apparatus as claimed in claim 3, wherein the inlet is a conduit which extends substantially perpendicular to the longitudinal axis of the flow chamber.

5. A beverage dispensing apparatus as claimed in claim 2, a vortex finder being provided within the flow chamber aligned in relation to the inlet such that in use, beverage flowing into the flow chamber is guided in a circular path between the surface of the vortex finder and the inner face of the flow chamber.

6. A beverage dispensing apparatus as claimed in claim 5, wherein the vortex finder comprises a portion in the form of a cylinder.

7. A beverage dispensing apparatus as claimed in claim 6, wherein the vortex finder further comprises a conic or frusto-conic part provided at the downstream end thereof.

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8. A beverage dispensing apparatus as claimed in claim 6, wherein the vortex finder is provided integrally with a valve head.

5 9. A beverage dispensing apparatus as claimed in claim 1, the apparatus being arranged to be oriented substantially vertically in use such that the beverage flows helically downwardly through the apparatus under the action of gravity.

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10. A beverage dispensing apparatus as claimed in claim 2, wherein the circular cross section of at least a part of the flow chamber decreases in diameter along its axis in the downstream flow direction.

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11. A beverage dispensing apparatus as claimed in claim 1, wherein a vortex breaker is provided in the apparatus to smooth the flow of beverage leaving the apparatus.

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12. A beverage dispensing apparatus as claimed in claim 2, the flow chamber comprising a hollow cylindrical upstream portion defining a vortex finding chamber and a conical or frusto-conical downstream portion depending therefrom.

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13. A beverage dispensing apparatus as claimed in claim 1, further comprising means for opening and closing the flow of beverage into the apparatus.

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14. A beverage dispensing apparatus as claimed in claim 13, the apparatus further comprising an inlet, wherein said means for opening and closing the flow of beverage into the apparatus are provided in the inlet.

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15. A beverage dispensing apparatus comprising an inlet conduit, a flow directing chamber, a valve member located within the flow directing chamber and an outlet conduit leading from the flow directing chamber, wherein the inlet  
5 conduit is arranged in relation to the flow directing chamber such that beverage flowing into the tap is directed to flow around the valve member substantially in one direction.

10 16. A beverage dispensing apparatus as claimed in claim 15, wherein the outlet conduit depends from the flow directing chamber and is arranged such that the flow of beverage around the valve member establishes a vortex flow within the outlet conduit.

15 17. A beverage dispensing apparatus as claimed in claim 15, wherein a vortex breaker is provided in the outlet conduit to smooth the flow of beverage leaving the apparatus.

20 18. A beverage dispensing apparatus as claimed in claim 15, wherein the valve member is axially movable within the flow directing chamber in such a way that the valve member opens and closes the inlet conduit.

25 19. A beverage dispensing apparatus as claimed in claim 18, wherein the valve member is provided with a vortex finding portion having a diameter significantly less than that of the flow directing chamber and a valve portion  
30 having a diameter substantially the same as that of the flow directing chamber, and the valve portion is operable to open and close the inlet conduit.

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20. A beverage dispensing apparatus as claimed in claim 15, wherein rotation of the valve member opens and closes the inlet conduit.

5 21. A beverage dispensing apparatus as claimed in claim 20, wherein the valve member is provided with a vortex finding portion having a diameter significantly less than that of the flow directing chamber and a circumferential wall portion located radially outward of the vortex finding  
10 portion and having a diameter substantially corresponding to that of the flow directing chamber, wherein an inlet port is provided in the circumferential wall portion and the valve member is rotatable within the flow directing chamber to bring the inlet conduit into and out of  
15 registration with the inlet port in such a way that the valve portion opens and closes the inlet conduit.

22. A beverage dispensing apparatus as claimed in claim 21, the tap being made of stainless steel.

20 23. A beverage dispensing apparatus as claimed in claim 21, the tap being made of glass.

24. A beverage dispensing apparatus as claimed in claim 21,  
25 the apparatus being made of plastics.

25. A beverage dispensing apparatus as claimed in claim 24, the apparatus being made of perspex.

30 26. A beverage dispensing apparatus as claimed in claim 7, wherein the conic or frusto-conic part thereof has a taper angle of up to 30°.

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27. A beverage dispensing apparatus as claimed in claim 25, wherein the conic or frusto-conic part thereof has a taper angle of less than 15° or preferably 10°.

5 28. A beverage dispensing apparatus as claimed in claim 27, wherein the conic or frusto-conic part thereof has a taper angle of between 7° and 3°, preferably between 7° and 5°.

10 29. A beverage dispensing apparatus as claimed in claim 28, wherein the conic or frusto-conic part thereof has a taper angle of about 5°.

15 30. A beverage dispensing apparatus as claimed in claim 7, wherein the conic or frusto-conic part thereof has a height of between 100mm and 30mm.

20 31. A beverage dispensing apparatus as claimed in claim 30, wherein the conic or frusto-conic part thereof has a height of about 50mm.

25 32. A method of dispensing a beverage comprising supplying the beverage to a flow directing chamber having a valve member located therein such that the beverage flows around the valve member substantially in one direction before flowing out of the chamber and being dispensed.

30 33. A method according to claim 32 and dispensing a beverage comprising forming a vortex flow in the mass of beverage as it is dispensed.

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